

Appl. No. 10/634,010
Amdt. Dated 01/19/2005
Reply to Office Action of October 19, 2004

REMARKS/ARGUMENTS

In the outstanding Office Action, claims 30-34 were rejected under 35 USC §112 based on the use of the word "first" in relation to the dielectric layer. It is to be noted that claim 8 is dependent on claim 30 and introduces a second dielectric layer, and claim 23 is dependent on claim 33 and also introduces a second dielectric layer. Claims 31, 32 and 34 have been amended herein to eliminate the word "first."

Claims 4-10 and 30 were rejected under 35 USC §103(a) as being unpatentable over Eynon in view of Miura. Regarding claim 30, the Examiner states that Eynon discloses in Figure 2 a refractory metal reflector 16 with a dielectric layer 18 over the reflector. The undersigned finds no such combination in Eynon. In particular, layer 16 in Eynon is aluminum (column 2, lines 17-22, see also the paragraph starting at column 3, line 10). In Eynon, layer 20 is a refractive metal, but clearly not a reflective layer, as layer 22 is a noble metal such as gold (column 2, starting on line 71). Accordingly, contrary to the Examiner's rejection, the refractory metal layer in Eynon is not a reflector, and further, does not have a dielectric layer over the refractory metal layer. Accordingly, Eynon is relevant for nothing more than merely showing a refractory metal layer in a structure having nothing to do with thin film resistors.

Regarding claim 4, while Miura discloses laser trimming of a thin film resistor, the structure used is entirely different from the structure claimed in claim 30 and further in claim 4. Combining these two references fails to show a combination of a refractive metal reflective layer reflecting laser energy through a dielectric layer to a thin film resistor. With respect to claim 5, the Examiner states that Eynon discloses dielectric layer 18 that is a predetermined thickness range which optimizes the laser trimming of the thin film resistor. It should be noted, however, that Eynon discloses layer thicknesses that are not highly critical, generally a thickness of the order of 8,000 to 10,000 angstroms for each layer is suitable, with a similar magnitude being suitable for the dielectric layers (column 2, starting on line 68). It should be noted that laser trimming is done using infrared lasers which, to optimize the laser trimming of the thin film resistors, must have a predetermined thickness range controlled to an accuracy of approximately 200 to 400 angstroms. Clearly, a layer having a thickness on the order of 8,000 to 10,000 angstroms is totally inappropriate for optimizing the laser trimming of the thin film resistor, both in terms of overall thickness and in terms of tolerance on that thickness.

Regarding claim 6 and claims 8-10, Eynon discloses a dielectric layer comprised of silicon dioxide, though as stated before, in an entirely different structure for an entirely different purpose. Regarding claim 7, Miura discloses a chromium silicon thin film resistor, however with respect to claims 6-10, it is believed that these claims are allowable as providing greater specificity to the claimed combination and adding additional novelty to that combination. Since claim 30 is believed not rendered obvious by the prior art, the claims dependent thereon are also believed allowable as adding additional novelty and specificity to the claimed combination.

Claims 12, 13, 31 and 34 were rejected under 35 USC §103(a) as being unpatentable over Eynon, Miura and further in view of Demir. First it is to be noted that the Examiner is combining three references when there is no indication or suggestion in any of the references that

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the same be combined with any of the other references. Further, as previously stated, Eynon does not disclose what the Examiner contends. Specifically, it does not disclose a refractory metal reflector and a dielectric layer over the reflector. Consequently, Eynon and Miura do not disclose all of the claim limitations, only a metal, insulator, metal capacitor.

Claims 16-20, 32, 22-25 and 33 were rejected under 35 USC §103(a) as being unpatentable over Eynon, Miura in view of Bailey. Regarding claim 32, it has already been pointed out that Eynon does not disclose what the Examiner contends, specifically, layer 16 is not a refractory metal reflector, but rather an aluminum layer. While Eynon does disclose a refractory metal layer, there is a noble metal layer thereover so that the refractory metal layer is not a reflector. Consequently, the mere disclosure of a mask layer as in Bailey cannot render the claimed combination obvious. Regarding claim 16, as pointed out before, the refractory metal layer in Eynon is not a reflector, as it is covered by a noble metal, not an insulator. Regarding claim 17, it is acknowledged that Eynon discloses a refractory metal layer, though in an entirely different structure than claimed in the present application. Also, regarding claim 19, it has already been pointed out that Eynon discloses layer thicknesses that are not highly critical, generally a thickness on the order of 8000 to 10,000 angstroms for each layer is suitable, with a suitable magnitude being suitable for the dielectric layers (column 2, starting on line 68). It was previously pointed out, also, that laser trimming is done using infrared lasers which, to optimize the laser trimming of the thin film resistors, must have a predetermined thickness range controlled to an accuracy of approximately 200 to 400 angstroms. Clearly, a layer having a thickness on the order of 8000 to 10,000 angstroms is totally inappropriate for optimizing the laser trimming of the thin film resistor, both in terms of overall thickness and in terms of tolerance on that thickness. Regarding claim 20, Eynon discloses a dielectric layer of silicon dioxide, but in a totally different structure for a different purpose. Regarding claim 33, again, Eynon discloses a refractory metal layer, but not a reflector, as it is not covered by a dielectric layer, but rather is covered by a noble metal. Consequently, Miura and Eynon do not disclose all the limitations except a mask layer over a reflective layer, and accordingly, when combined with Bailey neither disclose nor render obvious the claimed invention. Regarding claim 22, this claim is a dependent claim depending on claim 33, which has already been explained as not being disclosed nor rendered obvious by the cited prior art. Accordingly, the mere disclosure of a thin film resistor of chromium silicon in Miura cannot render the overall claimed combination obvious. With respect to claim 23, the Examiner states that Eynon discloses a dielectric layer, though it is not understood how this is relevant to claim 23, as claim 23 claims forming a second dielectric layer over said thin film resistor when Eynon has neither the second dielectric layer or a thin film resistor. With respect to claim 24, it has already been pointed out twice herein that Eynon discloses layer thicknesses that are not highly critical, generally a thickness of the order of 8000 to 10,000 angstroms for each layer is suitable, with a similar magnitude being suitable for the dielectric layers (column 2, starting on line 68). However, laser trimming is done using infrared layers which, to optimize the laser trimming of the thin film resistors, must have a predetermined thickness range controlled to an accuracy of approximately 200 to 400 angstroms. Clearly, a layer having a thickness on the order of 8000 to 10,000 angstroms is totally inappropriate for optimizing the laser trimming of the thin film resistor, both in terms of overall thickness and in terms of tolerance on that thickness. Regarding claim 25, it is acknowledged that Eynon discloses a dielectric layer of silicon dioxide, but in a different combination than

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claimed and for a different purpose. Note that the dielectric layer 18 of Eynon is not over a thin film resistor, but is in an entirely different combination. Accordingly, for all of the foregoing reasons, it is believed that all claims are now in condition for allowance, and accordingly, allowance at an early date is respectfully requested.

SUMMARY

As may be seen from the foregoing, the rejection of the claims in the present application is based initially on the assertion by the Examiner that Eynon discloses a refractory metal reflector 16 and a dielectric layer 18 over the reflector, referring to Figure 2 of Eynon. The undersigned disagrees with the Examiner that if such a combination were found in Eynon, the other references, together with Eynon, would render the claimed invention obvious because the Examiner is combining references where there is no teaching that such references should or could be combined, and in fact, Eynon is unrelated to thin film resistors. Further, however, it should be noted that Eynon does not disclose what the Examiner contends. Specifically, referring to Figure 2 of Eynon, and as supported by the specification, layer 16 is an aluminum layer. Layer 20, while being a refractory metal, is not a reflector, as it is covered by a noble metal layer 22. Accordingly, Eynon is relevant solely for showing a refractory metal layer and is otherwise irrelevant to the present invention. Accordingly, it is inappropriate to combine Eynon with any other references for purposes of rejection of any of the present claims.

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CONCLUSION

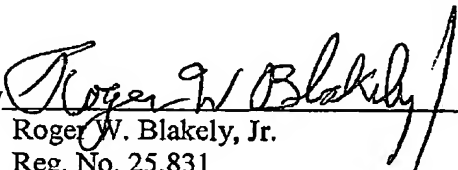
Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: 01/19/2005

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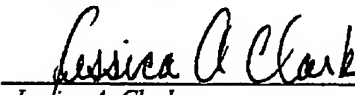
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